REMARKS/ARGUMENTS

Claims 1-12 remain in the application. All claims stand rejected.

The Applicant and the Examiner disagree over what the Ishibashi publication teaches. It is the Applicant's position that the Ishibashi publication uses transformation along a temporal axis whereas the Applicant claims "calculating Fourier components of an electrical current spatial distribution."

Further reconsideration is respectfully requested.

The Applicant's reasons for asserting that the Ishibashi publication uses transformation along a temporal axis is as follows: In the Ishibashi method relating to periodic electromagnetic quantities in a conductor, ω is the fundamental angular frequency (reciprocal time). K is a multiplier used with ω to identify harmonic frequencies. (See Ishibashi page 3020, right column near the bottom which reads: "Those for the kth harmonic components are given by replacing ω with k ω." This means that k is a coefficient of ω and belongs in the time or the inverse time domain.

On the other hand, Applicant's k belongs to a space domain. (See the Mansfield and Chapman reference, pages 212-213 which was cited at the beginning of Applicant's specification. Equations 3a and 3b of Mansfield and Chapman correspond to Applicant's Equations 12-15. Those of ordinary skill in the art at the time Applicant's invention was made were aware that equations 3a and 3b describe "the space Fourier transform pair" and k is "the reciprocal space." The reciprocal space k clearly belongs to the space domain.

The Examiner has rejected claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over Schenck in view of Kiyoshi et al. further in view of Ishibashi. Reconsideration is respectfully requested.

Schenck discloses two forms of series expansion--Taylor series and expansion of spherical harmonics--for calculating the design of a current carrying coil that will produce a given magnetic field. Schenck, as pointed out by the Examiner, does not address setting an inner coil to establish a target field gradient and setting an outer shield coil based on calculations involving calculating Fourier components of an electric current spatial distribution.

There is nothing in Schenck to suggest that for the problem considered by Schenck (calculating a current carrying coil that will produce a given magnetic field) at the interior of a coil (similar to Applicant's step of setting the inner coil to provide a target magnetic field gradient) requires methods other than those disclosed (Taylor series expansion or spherical harmonic expansion). Schenck does not suggest its methods are inadequate or need to be replaced or changed. There is certainly no suggestion to use Fourier components for the spatial distribution of an outer shield coil.

Kiyoshi et al. is directed to an NMR spectrometer having an outer low temperature superconductor coil and an inner replaceable coil. The coils together are designed to produce a target field (23.5T-1 GHz). Figure 3 discloses seven coils, coils #2, #6, and #7 are described as split pair coils. Figure 2 indicates some coils are shim coils. Nothing in Kiyoshi et al. suggests a shielding coil from the main or fixed nuclear magnetic resonance field.

Ishibashi is discussed above.

Even by picking and choosing from three references, it is not possible to reconstruct the Applicant's claimed method. No combination involves shield coils, for example.

In view of the foregoing remarks, it is urged this case is now in condition for allowance.

Respectfully submitted,

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